1994 NATIONAL SARE/ACE
Report to Congress

SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION *AND* AGRICULTURE IN CONCERT WITH THE ENVIRONMENT

November 1994 • United States Department of Agriculture • Cooperative State Research Service

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SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION *AND* AGRICULTURE IN CONCERT WITH THE ENVIRONMENT

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Contents

FOREWORD iii

OVERVIEW OF THE NATIONAL SARE AND ACE PROGRAMS 1

PROJECT ACTIVITY 5

Types of Project 5

Subject Matter 5

PRODUCER GRANTS 17

North Central Region Producer Grants Program 17

Northeast Region Producer Grants Program 18

NATIONAL INITIATIVES 21

Sustainable Agriculture Network 21

SAN and the Information Super Highway 21

Alternative Farming Systems Information Center 21

Economic and Environmental Impacts of Sustainable Agriculture 22

FUTURE DEVELOPMENTS 23

More About SARE and ACE Research and Education 23

Foreword

The Sustainable Agriculture Research and Education (SARE) Program continues to grow and flourish because of the dedicated efforts of numerous individuals, organizations and agencies who unselfishly provide time and effort to make it succeed. As you read through this report you will note many of the routine facts and figures that convey the mechanisms by which SARE administers programs and allocates funds. It also identifies project highlights and the projects funded during the past year. What it does not convey is the hard work, intensity, perseverance, enthusiasm and commitment of the people that are SARE - the national and regional program staff, regional administrative council and technical committee members, principal and cooperating project investigators, and many, many farmers and ranchers and their families. Neither does it convey the endless hours expended by individuals, groups and organizations who support and communicate SARE' s activities, impacts and future needs to Congress nor the efforts of Congressional members and staffers who support SARE through legislation and appropriations.

As I write this foreword, my colleagues and I across USDA are deeply embroiled in the writing of the 1995 Farm Bill. It is exciting for me to reread the Food, Agriculture, Conservation and Trade Act of 1990, Title XVI, Subtitle B - Sustainable Agriculture Research and Edu-

cation. This subtitle is our birth certificate and contains the "genetics" that define what we are to become. We have survived our infancy and are growing into early childhood. Like any youngster SARE is significantly affected by the surrounding environment. SARE has fought many battles, been battered and bruised, endured victory and defeat, and successfully carried the torch for sustainable agriculture in this country. Program accomplishments and impacts are being lauded and viewed as the next major thrust of agriculture around the world. Rarely a month goes by during which I do not receive correspondence or a visit from foreign scientists or agricultural administrators wishing to learn more about SARE.

The 1995 Farm Bill will carry SARE into its "teenage" years. It is difficult to say what people or events will shape SARE in the next five years; however, I trust that each of you will continue to take a vested interest in the program as will I. It has been a pleasure to serve as SARE Interim Director during the past year and to work with an outstanding and dedicated staff in Washington D.C. and at the regional host institutions. I look forward to watching SARE grow up.

Alice J. Jones
Interim Director

Overview of the National SARE and ACE Programs

What is the Sustainable Agriculture Research and Education Program?
SARE was initiated in 1988 and is currently authorized under Chapter 1, Subtitle B of Title XVI of the Food, Agriculture, Conservation and Trade Act of 1990 (FACTA).

What is the SARE appropriation?
The appropriation was $6.725 million in FY 1993, and $7.4 million in FY 1994.

How much matching funding has been provided?
Between 1988 and 1993 a total of $30.7 million of non-federal matching funds have been provided by project participants. This is 110 percent of the total SARE and ACE funds allocated to these projects (Figure 1).

How is SARE managed?
SARE is administered by the USDA Cooperative State Research Service in close cooperation with Extension Service. It is managed through four regional host institutions or host consortia: University of Vermont, University of Nebraska, Utah State University and University of Georgia in conjunction with Fort Valley State College. Each region has an administrative council composed of farmers and ranchers, and representatives of non-profit private organizations, agribusiness, government and academic institutions.

What is the responsibility of the National Sustainable Agriculture Advisory Council?
NSAAC advises the Secretary of Agriculture on ways to better coordinate USDA's efforts to make agriculture more sustainable. NSAAC is mandated in the 1990 Farm Bill. It has 28 members. Fourteen are from the private sector, and 14 represent federal and state agencies or academic institutions.

What is Agriculture in Concert with the Environment?
ACE was started in 1991, when the U.S. Department of Agriculture and the U.S. Environmental Protection Agency (EPA) joined to establish a new grants program patterned after SARE. This program is administered through the regional administrative councils, along with the SARE program. Its emphasis is on pollution prevention. EPA contributed $2.9 million to the ACE program between 1991 and 1993. SARE funds have matched the EPA contributions, for a three-year progrm total of $5.8 million.

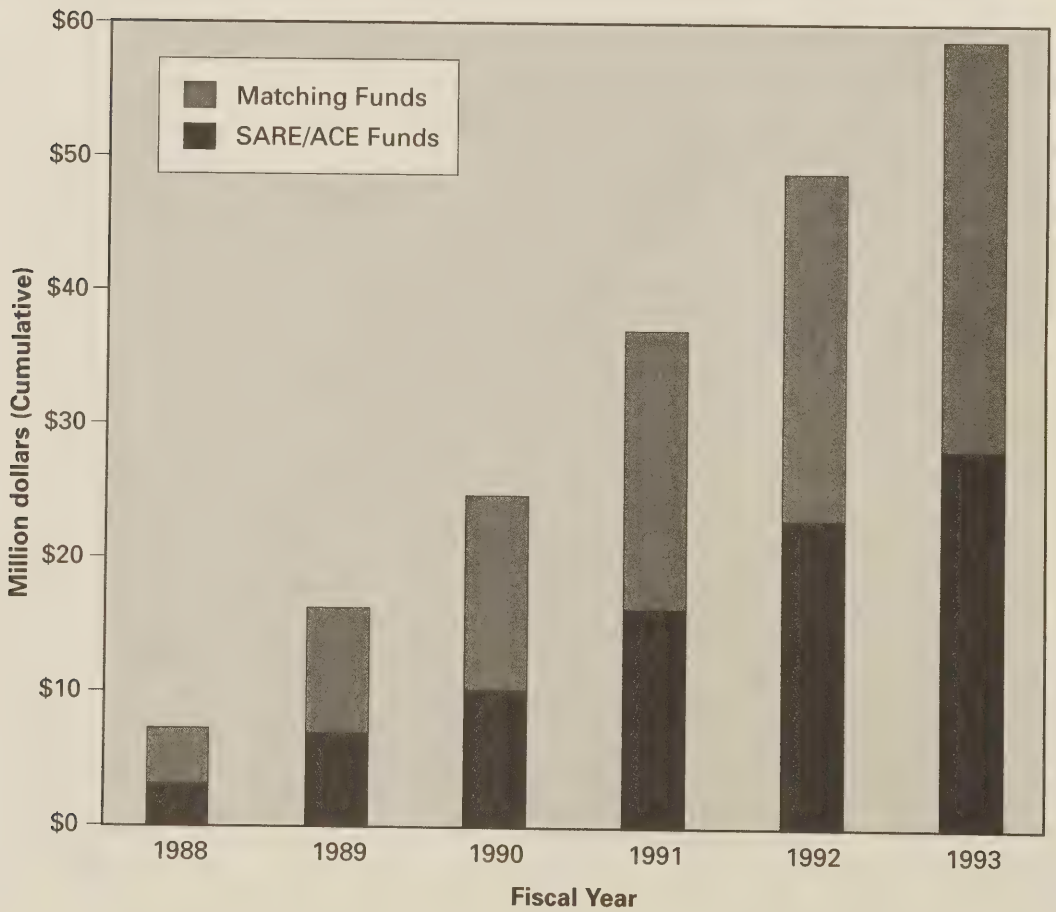
What is the goal of SARE and ACE?
These programs help to develop a research and an education base for the future economic viability, ecological soundness, and social acceptance of U.S. agriculture. The Farm Bill definition of sustainable agriculture states that farming practices must "enhance environmental quality and the natural

resource base upon which the agriculture economy depends" and "make the most efficient use of nonrenewable resources and integrate, where appropriate, natural biological cycles and controls." SARE and ACE complement other USDA programs, such as integrated pest management (IPM) and water quality.

The SARE program places special emphasis on whole-farm systems research, including the profitability of more sustainable methods. Additional projects are funded in the areas of experimental component research, exploratory research, demonstrations, and educational projects.

SARE also addresses the human and social goal of sustainable agriculture to improve the quality of life for farmers and ranchers, members of rural communities, and society as a whole. A central goal is to better understand how the means of production and resulting structure of agriculture will affect quality of life. A national task force has helped the regions develop a framework for integrating social science studies on quality of life into SARE/ACE projects, and for training the regional administrative councils and technical review committees in quality-of-life issues as related to SARE and ACE projects. The training program was offered for the first time in 1993, and all four regions will have received this training by the end of 1994.

Figure 1
Cumulative Matching and SARE/ACE Federal Funding



The ACE program is designed to help prevent agricultural pollution. These efforts concentrate on

* reducing the use of agricultural chemicals including pesticides and fertilizers;
* promoting adoption of nutrient management planning and reduced-risk pesticides and/or biological controls; and
* protecting ecologically sensitive areas.

These interests are compatible with USDA goals, including those of the SARE program, the Soil Conservation Service, Extension Service and others.

What role do producers play in the SARE and ACE programs?

Farmers and ranchers serve on regional technical review committees and administrative councils, as well as NSAAC. Producers also have the opportunity to initiate and implement SARE and ACE projects. Among some 178 currently active projects, 1,489 farmers or ranchers play major roles. Specifically,

* 1,053 helped generate ideas for projects;
* 465 have presented workshops;
* 256 provide land for replicated experiments;
* 497 help manage the projects.

How extensively is Extension involved?

Extension is a full partner in the implementation of the SARE and ACE programs, with representatives on all regional administrative councils, technical review committees, and NSAAC. In addition, 224 Extension personnel are major participants in active projects; 82 of these projects include Extension personnel as project coordinators.

Project Activity

What is the project history since 1988?
Between 1988 and 1993, the SARE and ACE programs reviewed 2,169 pre-proposals and 1,383 full proposals. A total of 367 projects, over 26 percent of the full proposals reviewed were funded — a total of $27.9 million. This includes 70 ACE grants for a total of $5.1 million.

In 1993, the North Central and Southern Regions 343 reviewed pre-proposals. Among the four regions, 161 full proposals were reviewed, and 65 grants were awarded — 41 SARE and 24 ACE (Table 1).

Between 1988 and 1992, the average size of grant was $76,800. SARE grants averaged $78,100, while the average ACE grant was $71,500. In 1993, SARE grants averaged $95,600, while ACE grants averaged $61,600.

TYPES OF PROJECT

The predominant type of SARE and ACE project funded has been the experimental component type (Table 2), accounting for about one-third of the projects funded, receiving $10.6 million. This trend continued in 1993 (Table 2).

Experimental component projects have been particularly prevalent in the SARE and ACE grant portfolio in the Southern Region (Figure 2). Furthermore, 110 of the 178 active projects in the United States (62 percent) include experimental components as part of the project design (Table 3).

Projects that predominantly deal with whole-farm systems have accounted for about one-quarter of the projects funded. However, 74 projects (over 41 percent of total) include some whole-farm analysis.

SUBJECT MATTER

What subject matter areas have the projects included?
SARE 1994 Project Highlights illustrates the wide range of subject matter of the SARE and ACE projects. More information on these and other projects is provided in the 1994 Regional Annual Reports, and the compendium reports for them.

Because of the inherent complexity of sustainable farming systems, each project typically deals with more than one subject matter area. Figure 3 provides an approximate indicator of program emphasis. For example:

Since 1988, the predominant subject matter of the project grants have been communications, education, or marketing (Figure 3).

Table 1. Summary List of SARE and ACE Projects Funded by Each Region in FY1993.

Project #	*Project Title*	*Project Coordinators*	*Organizations*	*SARE and ACE Funds*	*Non-Federal Matching Funds*	*Duration*
North Central Region, New SARE Projects						
LNC93-54	Low-Input Beef Cattle Systems of Production	Terry Klopfenstein	University of Nebraska	$70,686	$81,750	2 years
LNC93-55	Economic and Environmental Implications of 1990 Farm Bill Sustainability Provisions in Water Quality Sensitive Areas	Thomas L. Dobbs	South Dakota State University	82,650	64,580	2 years
LNC93-56	On-farm Adaptation of Integrated Crop and Livestock Systems in Illinois	Robert H. Hornbaker	University of Illinois	92,994	229,620	2 years
LNC93-57	Improving Nitrogen Utilization with Rotation and Cover Crops	Richard Harwood	Michigan State University	93,799	121,226	2 years
LNC93-58	Annual Medics: New Legumes for Sustainable Farming Systems in the Midwest	Craig C. Shaeffer	Univ of Minnesota; MN Dept. of Ag.; Michael Fields Ag Institute; Rodale Midwest; Michigan State University	130,000	85,262	2 years
LNC93-59	Beginning Farmer Sustainable Agriculture Project	Wyatt Fraas	Center for Rural Affairs; Univ. of Nebraska; NE SAS, Center for Holistic Resource Management	109,000	175,834	2 years
LNC93-60	Sustainable Agriculture Mentor Program	Timothy A. Powell	University of Nebraska Center for Rural Affairs NE SAS	77,000	53,000	2 years
LNC93-61	Sustainable Community Values Project	Verna Kragnes	Philadelphia Comm. Farm Hamline University; Univ. of Wisconsin	101,000	140,000	2 years
LNC93-62	A Biological Control Network for the Sweet Clover Weevil and Clover Root Curculio	David B. Hogg	University of Wisconsin ND State University, NPSAS Michael Fields Ag. Institute	58,551	24,291	2 years
FY1993 SARE Total, North Central Region				**$ 815,680**	**$ 975,563**	

Project #	Project Title	Project Coordinators	Organizations	SARE and ACE Funds	Non-Federal Matching Funds	Duration
North Central Region, New ACE Projects						
ANC93-15	Wildlife Values of Sustainable Agricultural Practices in the Northern Great Plains	Douglas H. Johnson	N Prairie Wildlife Res Ctr NDSU Carrington Research Extension Center N. Plains SAS, Manitoba-ND Zero Tillage Farmer's Association	57,000	36,000	2 years
ANC93-16	Compost Extracts and the Biological Control of Foliar Plant Disease	John H. Andrews	University of Wisconsin Michael Fields Ag. Institute; The Bruce Company, Ela Orchard	91,796	62,738	2 years
ANC93-17	An Integrated Riparian Management System to Control Agricultural Pollution and Enhance Wildlife Habitat	Richard C. Schultz	Iowa State University, The Leopold Center for SA-Iowa, Iowa Department of Natural Resources	90,170	85,340	2 years
ANC93-18	Assessing the Potential for Biological Control of Field Bindweed (Convolvulus arvensis) with the Gall Mite Aceria malherbe, and the Moth Tyta luctuosa	James R. Nechols	Kansas State University	75,185	32,848	2 years
ANC93-19	A Biological Control Network for the Sweet Clover Weevil and Clover Root Curculio	David B. Hogg	University of Wisconsin, ND State University, NP SAS Michael Fields Ag. Institute	35,849	23,411	2 years
FY1993 ACE Total, North Central Region				**$ 350,000**	**$ 240,337**	
FY1993 SARE and ACE Totals, North Central Region				**$1,165,680**	**$1,215,900**	

Northeast Region, New SARE Projects						
LNE93-34	An Integrated Extension/Research Program for Replacing Herbicides with Mechanical Cultivation in New York State	Jane Mt. Pleasant	Cornell Universityt	$ 103,235	$ 19,516	2 years
LNE93-35	Develop Crop Rotational Budgets for Three Cropping Systems in the Northeast	Robin G. Brumfield	Rutgers University	60,846	159,742	2 years
LNE93-36	Ecological Management of Potato Cropping Systems	Gregory A. Porter	University of Maine	111,870	0	3 years

Project #	Project Title	Project Coordinators	Organizations	SARE and ACE Funds	Non-Federal Matching Funds	Duration
LNE93-37	Integrating Stewardship Forestry into Total Farm Management	Stephen B. Jones James C. Finley	Pennsylvania State University	48,408	21,334	2 years
LNE93-38	Biodiversity Education Through the Pennsylvania Forest Stewardship Program	James C. Finley Stephen B. Jones	Pennsylvania State University	23,508	5,242	1 year
LNE93-39	Systems Analysis of Organic & Transitional Dairy Production	Enid Wonnacott	The Natural Organic Farmers Association	165,000	22,405	3 years
Northeast Region, SARE Renewal Projects						
LNE88-01	Development of a Low-Input Apple Production System for the Northeast	Terry Schettini	Rodale Institute University of Vermont	97,800	52,335	1 year
LNE88-02	Improving Farm Profitability by Efficiently Using the Pasture Resource	William Murphy	Univ. of Vermont, West Virginia Univ., SUNY	121,058	39,891	1 year
LNE90-20	Whole Farm Impact of Converting Conventionally Managed Eastern Vineyards to Organic Management Practices	R. M. Pool	Cornell University	67,932	70,704	1 year
LNE91-27	An Integrated Response to Pollination-Related Problems Resulting from Parasitic Honey-Bee Mites, The Africanized Honey-Bee, and Honey-Bee Pathogens	Nicholas W. Calderone	USDA/ARS Bee Research Laboratory, Cornell	39,250	10,575	1 year
LNE92-32	A Living Laboratory/Classroom for the Integration of Research and Education Efforts on Alternative Vegetable Production Systems	Kenneth Steffen	Pennsylvania State University	120,000	81,410	1 year
FY1993 SARE Total, Northeast Region				**$ 958,907**	**$ 483,114**	
Northeast Region, New ACE Projects						
ANE93-17	Improving Nutrient Management on a 100-Cow Free-Stall Dairy Farm	Evertt D. Thomas	W.H. Miner Agricultural Research Institute	97,000	25,252	3 years
ANE93-18	Ecological Management of Potato Cropping Systems	Gregory A. Porter	University of Maine	38,130	17,540	3 years

Project #	Project Title	Project Coordinators	Organizations	SARE and ACE Funds	Non-Federal Matching Funds	Duration
Northeast Region, ACE Renewal Projects						
ANE92-12	Ecosystem-Based Orchard Management for Processing Apples	Tara A. Baugher	W.V. University Experiment Station	50,670	27,636	1 year
ANE92-16	Development of a Low-Input Apple Production System for the Northeast	Terry Schettini	Rodale Institute, Univ. of Massachussetts, Rutgers, Cornell	164,200	172,280	1 year
FY1993 ACE Total, Northeast Region				**$ 350,000**	**$ 242,708**	
FY1993 SARE and ACE Totals, Northeast Region				**$1,308,907**	**$ 725,822**	
Southern Region, New SARE Projects						
LS93-51	Warm-Season Forage Grasses as Rotations for Sustaining Profitable Peanut Production	Rodriguez-Kabana, Rodrigo	Auburn University	183,000	48,500	2 years
LS93-52	Utilization of Dairy Manure in Low-Input, Conservation Tillage Animal Feed Production Systems	Mullen, Michael	University of Tennessee	90,635	36,123	3 years
LS93-53	Sustainable Whole Farm Grain/Silage Production Systems for the Southeast	Reeves, D. Wayne	Auburn University	240,639	218,600	3 years
LS93-54	Evaluation of Low-Input, No-Till, No-Herbicide Continuous Grazing System for Dairy Cows	Bertrand, Jean A.	Clemson University	118,911	62,700	3 years
LS93-55	Cover Crop Integration into Conservation Production Systems for Cotton and Sorghum	Dabney, Seth	USDA/ARS (Mississippi)	$ 135,540	$ 117,040	3 years
Southern Region, SARE Renewal Projects						
LS91-40.1	Utilization of Winter Legume Cover Crops for Pest and Fertility Management in Cotton	Rothrock, Craig	University of Arkansas	104,000	89,280	1 year
LS92-50.1	Participatory Assessment for Strategic Planning in Sustainable Agriculture Research and Education	Worstell, Jim	Community Farm Alliance (KY)	90,550	57,313	3 years
FY1993 SARE Total, Southern Region				**$ 963,275**	**$ 629,556**	

Project #	Project Title	Project Coordinators	Organizations	SARE and ACE Funds	Non-Federal Matching Funds	Duration
Southern Region, New ACE Projects						
AS93-7	Evaluation of Recycled Paper Mulch as an Alternative to Black Plastic Mulch in Vegetable Horticulture	Schonbeck, Mark	VA Assoc. for Biological Farming	40,000	10,100	2 years
AS93-8	Development of Sustainable Area-Wide Weed Management Practices for Improved Land Utilization	Grant, Jerome	University of Tennessee	165,000	133,000	3 years
AS93-9 (LS93-56)	Using Soldier Flies as a Manure Management Tool for Volume Reduction, House Fly Control and Feedstuff Production	Sheppard, D. Craig	University of Georgia	51,250	12,813	2 years
AS93-10 (Continue of LS91-39)	Use of Poultry Litter as a Soil Amendment in Southern Row Crop Agriculture: A Feasibility Study Based on Agronomic, Environmental, and Economic Factors	Miller, David M.	University of Arkansas	100,000	64,043	1 year
AS93-11	Use of Poultry Litter or Manure for Root-Knot Nematode Management on Vegetables and Field Crops	Fortnum, Bruce A.	Clemson University	99,900	82,000	2 years
FY1993 ACE Total, Southern Region				**$ 456,150**	**$ 301,956**	
FY1993 SARE and ACE Totals, Southern Region				**$1,419,425**	**$ 931,512**	

Western Region, New SARE Projects						
LWD93-6	Navajo Nation Whole Farm/Ranch Sustainable Systems Demonstration Project	Lyle McNeal	Utah State University	$ 14,000	$ 0	1 year
LWD93-7	Development of Sustainable Crop and Livestock Production Systems for Land in the Conservation Reserve Program (CRP)	Rex Kirksey	New Mexico State University	14,000	0	1 year
LW93-33	Development of Sustainable Crop and Livestock Production Systems for Land in the Conservation Reserve Program (CRP)	Rex Kirksey	New Mexico State University	208,000	138,007	2 years
LW93-34	Navajo Nation Whole Farm/Ranch Sustainable Systems Demonstration Project	Lyle McNeal	Utah State University	200,000	176,000	2 years

Project #	*Project Title*	*Project Coordinators*	*Organizations*	*SARE and ACE Funds*	*Non-Federal Matching Funds*	*Duration*
Western Region, Continuing SARE Projects						
LW91-22	Brassica Utilization in Sugarbeet Rotations for Biological Control of Cyst Nematode	D.W. Koch	University of Wyoming	51,000	91,528	1 year
LW91-23	Farm Improvement Club Network for Sustainable Agriculture	Nancy Matheson	Alternative Energy Resources Organization	27,500	10,000	1 year
LW91-24	Specifying and Analyzing of Whole-Ranch Systems for Sustainable Range Livestock Production in Environmentally-Sensitive Areas	Jack Riesselman	Montana State University	95,000	108,700	1 year
LW91-26	Cover Crops to Facilitate Low-Input Production of California's Raisin, Table and Wine Grapes	F.G. Zalom	University of California	42,142	54,660	1 year
LW91-27	Development of Winter Wheat Cover Crop Systems for Weed Control in Potatoes	C. Eberlein	University of Idaho	8,971	17,377	1 year
LW91-28	A Multidisciplinary Approach to Evaluate and Aid the Transition from Conventional to Low-Input Pest Management Systems in Stone Fruits	K.Daane R.S. Johnson	University of California, Davis/Berkeley	99,938	68,868	1 year
LW91-29	Development of Sustainable Potato Production Systems in the Northwest	J.C. Stark	University of Idaho Washington State University Cooperative Extension Service	$ 110,000	$ 270,110	1 year
LW91-30	Assisting Resource Poor, Small Scale Farmers with Adoption of Low-Input Technologies at the Rural Development Center Near Salinas, CA	P.L. Gersper	University of California, Berkeley	59,995	87,306	1 year
LWD92-5	Conference on the Science of Sustainable Agricultural Systems	David Bezdicek	Washington State University	15,500	0	1 year
FY1993 SARE Total, Western Region				**$ 946,046**	**$1,022,556**	

Western Region, New ACE Projects						
AW93-10	Educational Video on Management of Pinyon-Juniper Ecosystems—A New Approach	Howard Shanks	New Mexico Co. South Central Mountain RCD	20,000	5,000	1 year
AW93-11	Calibration of the Pre-sidedress Soil Nitrate Test to Improve Nitrogen Management on Dairy Farms	Neil Christensen John M. Hart	Oregon State University	24,624	19,345	2 years

Project #	Project Title	Project Coordinators	Organizations	SARE and ACE Funds	Non-Federal Matching Funds	Duration
AW93-12	Range Monitoring in the Upper Stony Creek Watershed	Sheila Gaertner	University of California	13,600	11,400	3 years
AW93-13	A High-Input Crop Production System in Coastal California as a Model for Developing Indicators of Agroecosystems Sustainability	S. Gliessman	University of California	40,000	14,530	1 year
AW93-14	Introduction of Cover Crops into Annual Rotations in Northern California	Mark Van Horn	University of California	21,199	14,000	1 year
AWD93-1	Compatibility of Livestock and Water Birds on Improved Pastures	Hudson A. Glimp Lewis W. Oring	University of Nevada-Reno	10,000	0	1 year
Western Region, Continuing ACE Projects						
AW91-2	Integration of Aquaculture into an Irrigated Farm to Improve Efficiency of Water and Nutrient Use	Mary W. Olsen	University of Arizona	$50,000	$70,855	1 years
AW91-3	Canola, Rapeseed, and Spring Pea as Enhancers of Soil Nutrient Availability and Crop Productivity in Cereal Rotations	M.P. Wescott N.W. Callan	Montana State University	53,000	53,700	1 year
FY1993 ACE Total, Western Region				**$ 232,423**	**$ 188,830**	
FY1993 SARE and ACE Totals, Western Region				**$1,178,469**	**$1,211,386**	
FY1993 SARE and ACE Totals, All Four Regions				**$5,072,481**	**$4,084,620**	

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Table 2.
Number of Grants and Percentage Allocation of SARE and ACE Funds to Various Types of Projects in 1993 and Previous Years, United States.

Project Type Best Describing the Project	*Number of Grants in Fiscal Year:*		*Percent of Total Funds Awarded*	
	1993	1988-92	1993	1988-92
Whole Farm Systems	12	66	18	22
Natural Systems	7	1	11	0
Experimental Component	21	101	32	33
Exploratory Component	6	8	9	3
Economic Impact Assessment	0	4	0	1
Environmental Impact Assessment	1	4	2	1
Quality of Life Impact Assessment	0	2	0	1
Whole Farm Demonstration Sites	8	29	12	10
Decision Support Systems and Databases	2	16	3	5
Education, Training, Info Transfer	8	63	12	21
Other	0	8	0	3
Total, All Types	**65**	**302**	**100**	**100**

Figure 2.
SARE and ACE Funds Granted for Each Type of Project, 1988-93, by Region

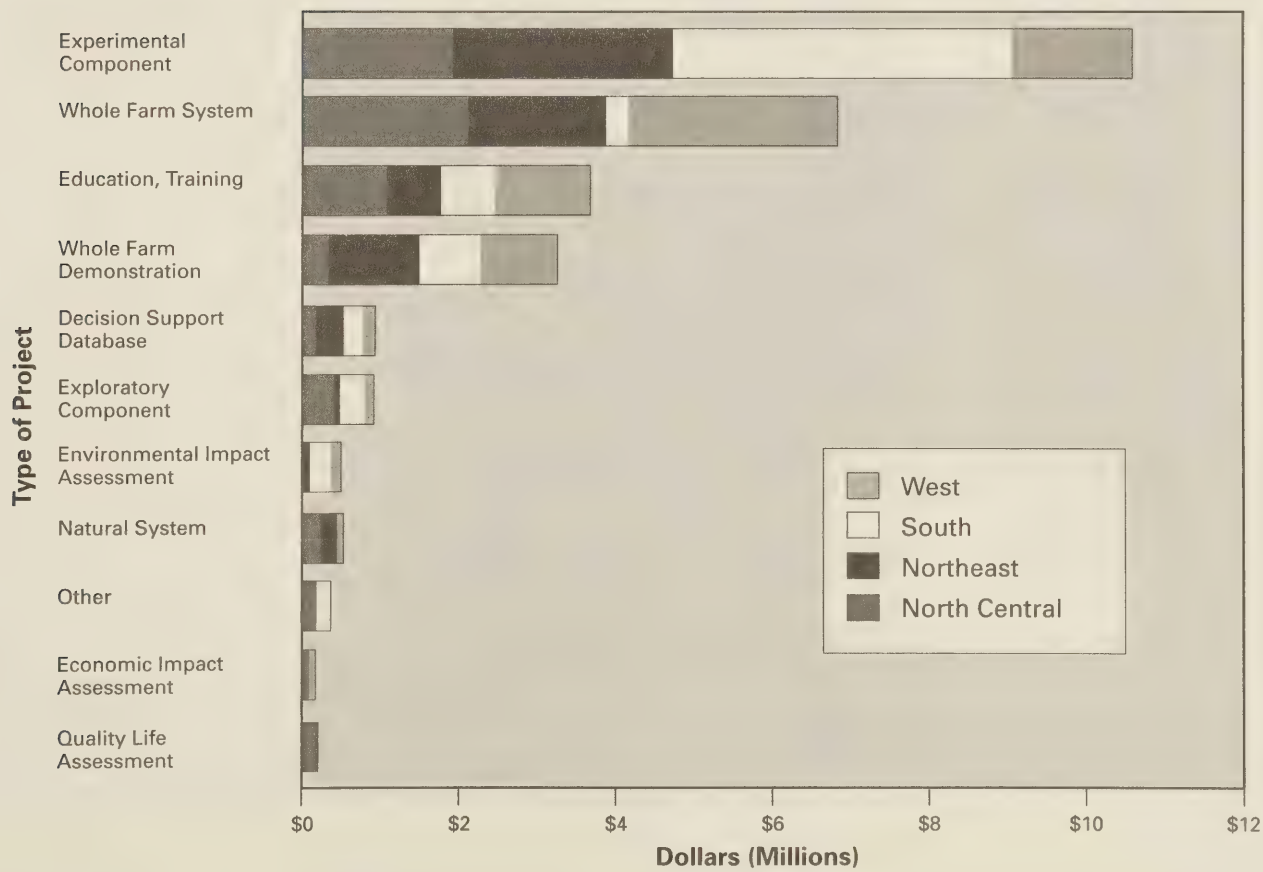


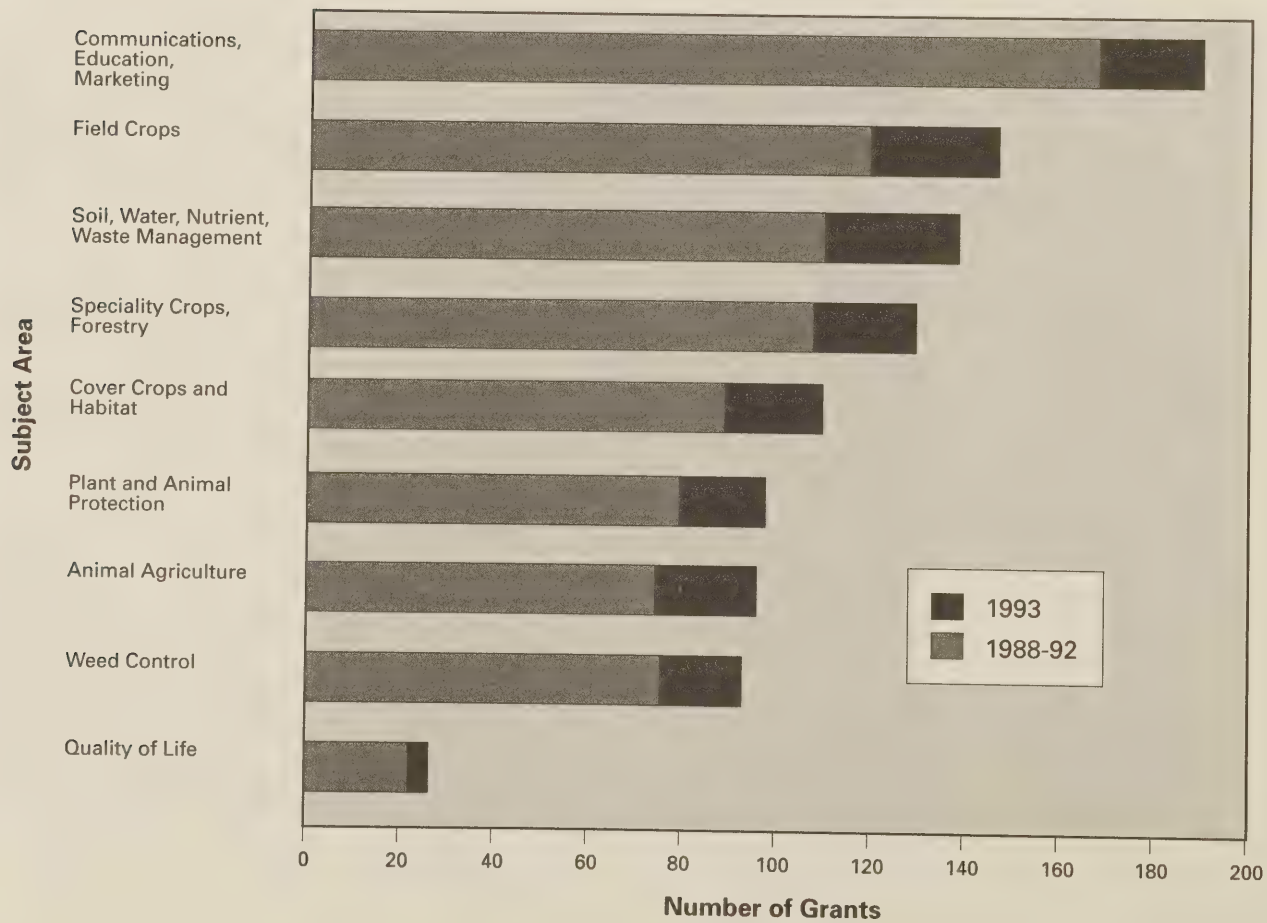
Table 3.
Active Projects in 1993 That Include Specific Types of Activity in Each Region and United States.*

Project Types Included in the Project	*North Central*	*Northeast*	*Southern*	*Western*	*U.S.*
Number of Active Projects	58	35	43	42	178
Whole Farm Systems	24	15	13	22	74
Natural Systems	5	7	2	8	22
Experimental Component	33	22	25	30	110
Exploratory Component	18	13	10	20	61
Economic Impact Assessment	21	20	23	17	81
Environmental Impact Assessment	15	13	20	17	65
Quality of Life Impact Assessment	5	2	1	5	13
Whole Farm Demonstration Sites	17	17	13	16	63
Decision Support Systems and Databases	5	11	11	9	36
Education, Training, Information Transfer	34	27	20	29	110

Columns may not add to meaningful totals, because projects include more than one type of activity.

Figure 3.
Number of SARE and ACE Grants Awarded for Projects that Include Specific Subject Areas, United States, 1988-92 and 1993

Projects usually deal with more than one subject, thus numbers of grants across subject areas are not additive.



Since 1988, 2 projects have dealt primarily with assessment of quality of life. Both were SARE projects in the North Central Region. These two projects received $164,544 of SARE funds.

Five 1993 grants dealt with quality of life. However, 13 active projects include quality of life as part of the project.

81 of the 178 active SARE and ACE projects (46 percent) include economic impact assessment, usually in estimating the profitability of alternative farming systems (Table 3).

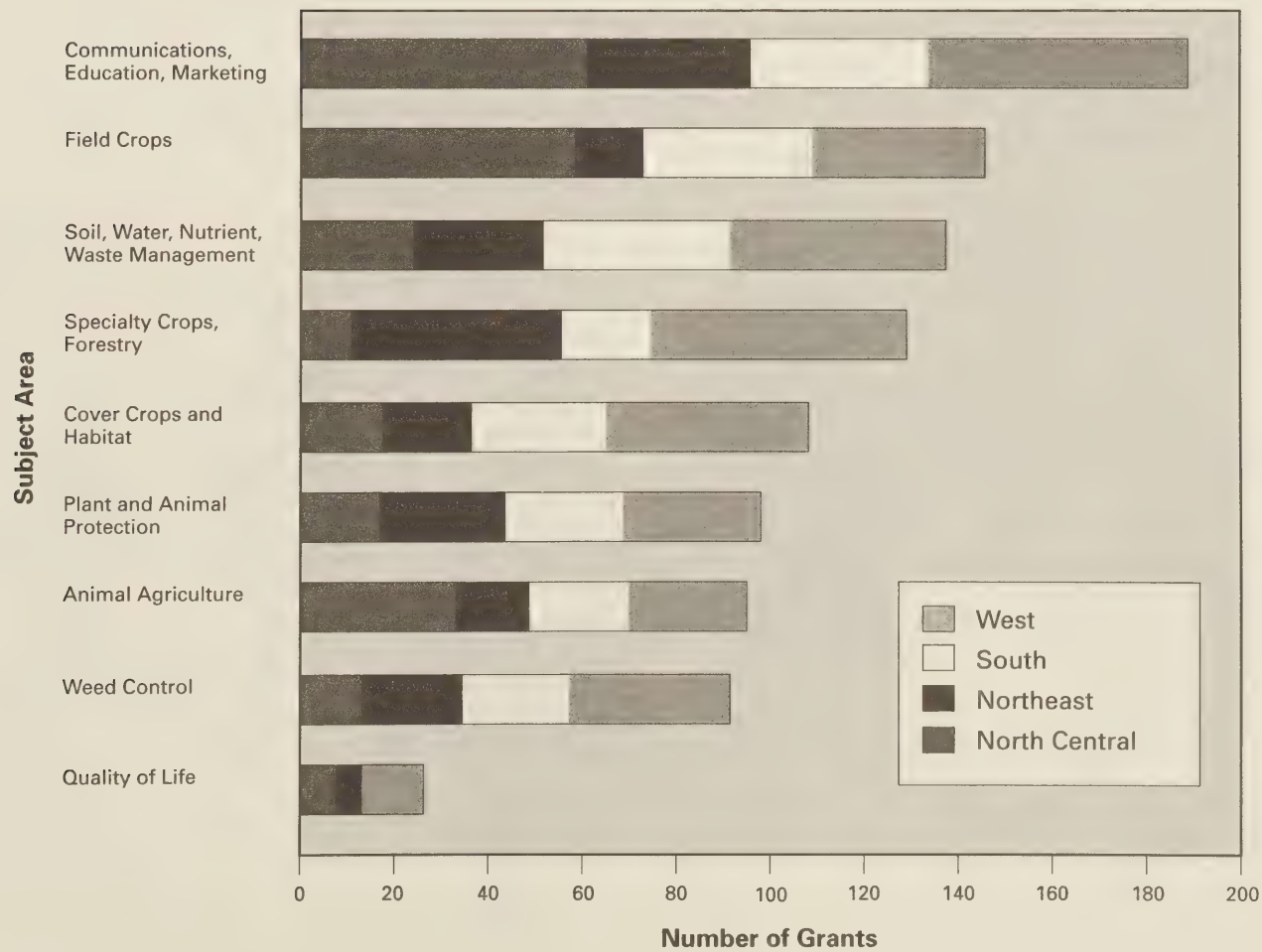
Forty percent of all SARE and ACE grants include field crops. Field crops are naturally most prevalent in the North Central Region (which includes the Corn Belt). By contrast, only 16 percent of the Northeast Region's projects include field crops (Figure 4).

This general trend continued in 1993.

Specialty crops (such as fruits, nuts, and vegetables) or forestry are featured in 49 percent of the Northeast Region's grants, and 57 percent of those awarded in the Western Region.

Figure 4.
Subject Matter Priorities–Number of SARE and ACE Grants Awarded by Each Region to Projects Including Specific Subject Areas, 1988-92

Projects often deal with more than one subject, thus numbers of grants across subject areas are not additive.



This ratio reflects the predominance of specialty crops in these Regions. In contrast, only 10 percent of North Central and 26 percent of Southern grants were for projects including specialty crops or forestry.

This trend also continued in 1993.

Ninety-six of the grants were for projects including animal agriculture; 32 percent of the North Central Region projects include animal agriculture, much more than the other regions.

However, in the North Central Region this subject declined to only 14 percent of grants in 1993, but increased to about half the grants in the Southern and Western Regions.

One hundred and thirty-nine of the grants include soil and water conservation or waste management, among other topics. This subject matter category was more prevalent among projects in the Southern and Western than in the other two regions.

This trend remained essentially unchanged in 1993.

One hundred and nine grants were for projects that include cover crops and habitat management; 45 percent of the Western Region's grants include this subject category, far more than in the other Regions.

This trend continued in 1993. ■

Producer Grants

Which regions had implemented producer grants program by 1993?

The North Central Region continued its producer grant program, started in 1992, and the Northeast Region Administrative Council established a producer grants program in 1993. The other two regions (Southern and Western) will implement producer grants programs in 1994.

NORTH CENTRAL REGION PRODUCER GRANTS PROGRAM

Several themes are central to most of this year's North Central Region SARE/ACE producer grants: continued diversification of farm income, whole-farm solutions, reduced purchased inputs, and soil and water conservation. Fifteen, or almost half of the projects, address grazing concerns. Thirty-one of the 92 applications were funded for a total of $98,847. These are one-year grants, running from September 1993 to August 1994. Results from all producer grants will be compiled annually.

Project FNC93-27:

Using Angora Sheep and Goats to Control Leafy Spurge, by Marvin and Evelyn Lange, Nebraska. SARE funding: $1,860.

Project FNC93-28:

Adding Nitrogen Naturally with a Hairy Vetch Cover Crop, by Walt Townsend, Illinois. SARE funding: $3,760.

Project FNC93-29:

Establishing Alfalfa with a Winter Rye Companion Crop, by Gary Young, Nebraska. SARE funding: $2,168.

Project FNC93-30:

Biological Control of Plumeless Thistle, by Gary Young, Nebraska. SARE funding: $3,644.

Project FNC93-31:

Improving On-Farm Evaluation with a Portable Scale, by Tom Frantzen, Iowa. SARE funding $ 1,388.

Project FNC93-32:

Evaluating and Comparing Cattle Feeding Systems, by Don Fox, Nebraska. SARE funding: $950.

Project FNC93-33:

Evaluating Pasture Quality to Improve Management Skills, by Southeast Minnesota Graziers, Dan C. French, Minnesota. SARE funding: $3,290.

Project FNC93-34:

Diversification with Hazelnuts — Minnesota, by Phillip Brase, Minnesota. SARE funding: $4,125.

Project FNC93-35:

Intensive Rotational Grazing for Sheep, by John and Linda Oswalt, Michigan. SARE funding: $1,868.

Project FNC93-36:

Implementing a Water System for Rotational Grazing, by Schafer Edinburg Farms, Inc., David Schafer and Alice Dobbs, Missouri. SARE funding: $4,832.

Project FNC93-37:

Composting Livestock Manure, by George Shetler, Michigan. SARE funding: $2,600.

Project FNC93-38:

Earthworms as Natural Soil Builders, by Robert VanHoveln, Illinois. SARE funding: $4,340.

Project FNC93-39:

Replicated Manure Use Trials, by Dick and Sharon Thompson, Iowa. SARE funding: $5,000.

Project FNC93-40:

Rotational Grazing for Custom Dairy Heifer Feeding, by Thomas W. Wrchota, Wisconsin. SARE funding: $4,985.

Project FNC93-41:

Hilum Soybean Variety Trials for an Organic Market, by David and Tom Vogelsberg, Kansas. SARE funding: $2,150.

Project FNC93-42:

Establishing Hazelnut Windbreaks — Iowa, by Michael Natvig, Iowa. SARE funding: $575.

Project FNC93-43:

Forage and Brassicas Trial with Rotational Grazing, by Dale Kellenberger, Michigan. SARE funding: $4,688.

Project FNC93-44:

Quality of Life Evaluation of Rotational Grazing on a Dairy Farm, by Ed Jeanquart, Kevin Kiehnau, Diane McNeil, Wisconsin. SARE funding: $3,600.

Project FNC93-45:
Composted Manure vs. Raw Manure or Commercial Fertilizer, by Rich Vander Ziel, Minnesota. SARE funding: $1,600.

Project FNC93-46:
Producing and Processing Sweet Sorghum for Syrup, by Richard A. Wittgreve, Wisconsin. SARE funding: $1,700.

Project FNC93-47:
Moving from Confinement to Grazing, by Francis Jr. and Lou Ann Lueken, Indiana. SARE funding: $4,970.

Project FNC93-48:
Mechanical and Cultural No-Chemical Weed Control, by Jerome Berning, Kansas. SARE funding: $2,950.

Project FNC93-49:
Applying Liquid Manure in a Commercial Orchard, by John Muma, Michigan. SARE funding: $4,551.

Project FNC93-50:
Composting Rural and Urban Waste, bu Marlin Goebel, Michigan. SARE funding: $4,950.

Project FNC93-51:
Grazing on Former CRP Acres, by Charles Cornillie, Minnesota. SARE funding: $5,000.

Project FNC93-52:
Conservation and Residue Management Field Day, by Clair Niles, Kansas. SARE funding: $2,180.

Project FNC93-53:
Grass and Legume Trials, by Ted Rolling, Minnesota. SARE funding: $3,500.

Project FNC93-54:
Rotational Grazing Grass Trial, by Kevin and Lisa Kirker, Wisconsin. SARE funding: $3,009.

Project FNC93-55:
Transition to Rotational Grazing and Using Birds to Control Flies, by Myron and Marcie Herek, Wisconsin. SARE funding: $2,850.

Project FNC93-56:
Poultry for Potato Pest Control, by Shelly and Quinn Cumberworth, Michigan. SARE funding: $2,044.

Project FNC93-57:
14-Forage Trial, by Kenneth and Judy King, Kansas. SARE funding: $3,000.

NORTHEAST REGION PRODUCER GRANTS PROGRAM

During 1993, the Northeast Region Sustainable Agriculture Research and Education (SARE) Program awarded $94,347 to 35 farmers to test innovative farming techniques and share what they learn with other producers. The program received 168 applications for funding from farmers in the 12-state region. Many of the projects will conduct field days or workshops. All are required to provide a final written report, which will be used by the Northeast Region to disseminate results.

Project FNE93-1:
Transplanting Cole Crops in Rye/Vetch Sod, Erroll A. Mattox, Maryland. SARE funding: $360.

Project FNE93-2:
The Use of Rotational Grazing in the Production of Lambs for the Hothouse Market, by Richard Leverett, New York. SARE funding: $2,250.

Project FNE93-3:
Integrated Crop Management for Greenhouse Bedding Plants with Emphasis on Biological Control, by Don Ziegler, Massachusets. SARE funding: $1,199.

Project FNE93-4:
Evaluation of Five Organic Techniques on Controlling Flea Beetles on Kennebec Potatoes, by Myra Bonhage-Hale, West Virginia. SARE funding: $755.

Project FNE93-5:
The Evaluation of Different Rates of Compost Produced by the Lubke Method on Soybean Yields and the Soil, by David & Brenda Gaither, Maryland. SARE funding: $2,100.

Project FNE93-6:
Development and Evaluation of an Alternative Ice House Refrigeration System, by Charlie Chase, Rhode Island. SARE funding: $1,500.

Project FNE93-7:
Ginseng Production Project, Van and Edna Wysong, West Virginia. SARE funding: $1,750.

Project FNE93-8:
Flame Weed Control in Cut Flower Production, Paul Pieri, Rhode Island. SARE funding: $1,350.

Project FNE93-9:
Evaluation of the Economic and Environmental Impact of Amino Acid Based Laying Rations, by Charles Wallace, Maine. SARE funding: $660.

Project FNE93-10:
Nutrient Management For Potatoes Used for Potato Chips, by Carl D. Smith, Maine. SARE funding: $5,000.

Project FNE93-11:
Evaluation of a Fiber Flax Production System as a Low Input, Alternative Crop for Northern New England, Greg Ward, Maine. SARE funding: $5,000.

Project FNE93-12:
Bio-Control of Corn Earworm and European Corn Borer in Sweet Corn, Nicholas C. Maravell, Maryland. SARE funding: $1,510

Project FNE93-13:
Subterranean Clover as an Organic Mulch for Pumpkin Production, by Robert K. Clark, New Jersey. SARE funding: $1,576.

Project FNE93-14:
Increasing Options for Cover Cropping in the Northeast, by Steve Porter, New York. SARE funding: $1,865.

Project FNE93-15:
Evaluation of a Biocontrol Method for Farm Fly Management, by Diane Matthews-Gehringer, Pennsylvania. SARE funding: $2,155.

Project FNE93-16:
Stewardship Forestry on the Farm, by George W. Freeman, Pennsylvania. SARE funding: $3,890.

Project FNE93-17:
Utilizing Municipal Leaf Compost in Apple and Peach Production, by Steve Iuliucci, New Jersey. SARE funding: $2,403.

Project FNE93-18:
Reducing Deer Damage to a Blueberry Plantation, by William H. Sweet, Vermont. SARE funding: $500.

Project FNE93-19:
Small Farm Biogas Production & Use, by Ara Lynn, New Jersey. SARE funding: $5,096.

Project FNE93-20:
Demonstrating a Sustainable Agricultural System by Using Beneficial Insects, by James I. Munger, Massachusetts. SARE funding: $1,306.

Project FNE93-21:
Evaluation of Puna Chicory Overseeding in Sheep Pasture in Central New York, by Karl North, New York. SARE funding: $1,975.

Project FNE93-22:
Deep Root Organic Truck Farmers Co-op Mentor Program, by Dennis Sauer, Vermont. SARE funding: $3,300.

Project FNE93-23:
Mountain Sheep Project, by David Major, Vermont. SARE funding: $3,600.

Project FNE93-24:
Cranberry 2000, by Darin Hammond, Maine. SARE funding: $6,250.

Project FNE93-25:
Demonstrate the Effectiveness of Fiber-Producing Goats as an Alternative to Chemical Weed and Brush Control Relative to Pasture Reclamation and Management, by Ellen Reker, Pennsylvania. SARE funding: $5,000.

Project FNE93-26:
Integrated, Season Extension, Solar Greenhouse, by Steve Gilman, New York. SARE funding: $5,825.

Project FNE93-27:
A Wetland Demonstration Project for Water Quality Improvement, Wildlife Habitat Creation, and Farmer Education, by Derek S. Dickson and B. C. Dickson, Pennsylvania. SARE funding: $5,000.

Project FNE93-28:
Leaf Compost Potting Project - N. Casertano Greenhouses & Farms, by Duncan McDougall, Connecticut. SARE funding: $2,895.

Project FNE93-29:
Soil Heating in Unheated Tunnels, by Michael Collins, Vermont. SARE funding: $973.

Project FNE93-30:
Growing Fish on an Organic Farm, by George McNulty, New Jersey. SARE funding: $2,600.

Project FNE93-31:
New Sprayer Technology For Reduction of Pesticide Use in Apples, by W. H. Palmer, New York. SARE funding: $4,060.

Project FNE93-32:
Managing Crowded Woodlots though Shiitake Mushroom Production, by Pam Talley, West Virginia. SARE funding: $3,000.

Project FNE93-33:
Evaluation of Integrated and Biological Pest & Disease Controls in Orchards, by Dwight Mickey, Pennsylvania. SARE funding: $1,839.

Project FNE93-34:
Demonstration of Living Mulch Systems for Low-Input Tomato Production, by Jim Quarella, New Jersey. SARE funding: $3,575.

Project FNE93-35:
Evaluation of Alternatives to Synthetic Chemicals and Lime for Nutrient Supply, Weed Suppression, and pH Control on Raspberry Plants, by John R. Shaw and Mark Towle, New Hampshire. SARE funding: $2,500.

Project FNE93-36:
Reactions of Peracetic Acid to Botrytis Cinerea, by James Perkins, Pennsylvania. SARE funding: $1,830.

National Initiatives

What major national initiatives did the SARE and ACE programs fund in 1993, and what did these projects accomplish?

SUSTAINABLE AGRICULTURE NETWORK

The Sustainable Agriculture Network (SAN) is a consortium of public and private organizations initiated and funded by SARE. The purpose of SAN is to facilitate an effective and efficient flow of information about sustainable agriculture to a wide array of audiences, including farmers, ranchers, Extension personnel, scientists, government officials, and the public.

SAN published a national 1993 Sustainable Agriculture Directory of Expertise. This book lists 717 people or groups providing information to a wide variety of users. Additional entries totalling over a thousand names have been assembled by the SAN committee.

SAN also published the 1993 Showcase of Information and Educational Materials. .

SAN also produced a portable display which is available to the regions for presentations at conferences and other public gatherings. The display contains many key publications on sustainable agriculture.

SAN AND THE INFORMATION SUPER HIGHWAY

SAN, the Sustainable Agriculture Network, also sponsors an electronic mail discussion group for users of the Internet. Participants from around the nation and the world (numbering 600 at this writing) post notices, report breaking news, distribute newsletters, and request help for locating information or answering specific questions. A calendar of events is also posted regularly. For help on searching the Internet for SAN databases or to learn more about the mail group, contact:

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ALTERNATIVE FARMING SYSTEMS INFORMATION CENTER

The Alternative Farming Systems Information Center (AFSIC) at the National Agricultural Library in Beltsville, Maryland, responded to 16,000 requests for information; provided 26 new information products, and hosted the SAN project coordinator. AFSIC is an integral part of SARE.

ECONOMIC AND ENVIRONMENTAL IMPACTS OF SUSTAINABLE AGRICULTURE

Analysis is being done at several levels, from individual field operations to whole farms to larger geographic areas. At the field and farm level, a national initiative started in 1989 is helping the University of Minnesota to develop an integrated decision-support system (PLANETOR) for assessing on-farm financial performance and environmental impacts. This comprehensive software has been field tested in dozens of states with hundreds of farms; it is scheduled to be completed in 1994.

Meanwhile, many of the SARE and ACE projects include experts in farm management who are compiling and analyzing data on the costs and returns of alternative farming methods and systems.

In addition, a $1.2 million national initiative funded by ACE is under way to assess the economic and environmental impacts of potential widespread adoption of more sustainable farming systems. This three-year project, coordinated by the Economic Research Service of USDA, consists of one national macroeconomic study being conducted at University of Tennessee plus six sub-regional microeconomic studies being carried out in Maryland, Montana, Nebraska, Ohio, Tennessee, and Washington. This initiative is scheduled to be completed in 1995. ■

Future Developments

What new hypotheses and ideas for additional research have emerged from the SARE and ACE projects?

In their annual or final reports, the coordinators of the SARE and ACE projects listed a total of more than 170 new hypotheses and over 200 areas needing additional research. These ideas and hypotheses will be presented along with the findings of the projects in the 1994 compendium report. Through the Sustainable Agriculture Network, this and other reports will be presented both in electronic form (on FolioViews diskette and on Internet) and hard copy.

What new developments will be added in 1994?

A new sustainable agriculture training program will be established under Chapter 3 of the sustainable agriculture legislation. Administered through the USDA Extension Service, this new program will provide sustainable agriculture education and training for Extension educators and other interested people. It will operate as a partnership among the State Cooperative Extension Services, CSRS, Soil Conservation Service, farmers and other public and private organizations.

MORE ABOUT SARE AND ACE RESEARCH AND EDUCATION

The 1993 National Compendium of Research and Education Projects contains detailed background and annually updated progress reports on all funded SARE and ACE projects. This information is available in print on Folio Infobase diskette or via the Internet system of computer networks. No charge as supplies last. Contact the regional communications office of each regional SARE/ACE program for printed regional versions, or for the SAN information on "Infobase" DOS diskette, contact Phil Rasmussen (the incoming Western regional coordinator), Ag Systems Technology Dept., Utah State University, UMC-2349, Logan, UT 84322-2349.

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